

## Homework Check

1. yes



no



no

4. yes

5.  $a, c, b$

6.  $a, b, c$

7.  $v, z, y, w, x$

8. By the Triangle Inequality Conjecture, the sum of 21 cm and 25 cm should be greater than 48 cm.

9.  $b = 55^\circ$ , but  $55^\circ + 130^\circ > 180^\circ$ , which is impossible by the Triangle Sum Conjecture.

10.  $135^\circ$

11.  $72^\circ$

12.  $6 < \text{length} < 102$

13. Probability is 0—lengths given are not a triangle

16.  $ABE$

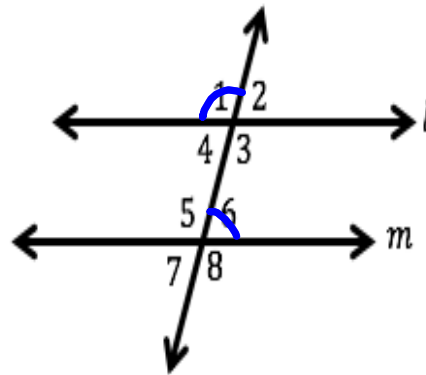
20.  $a = 90^\circ, b = 68^\circ, c = 112^\circ, d = 112^\circ, e = 68^\circ, f = 56^\circ, g = 124^\circ, h = 124^\circ$

# Complete Triangle Inequality Investigation.

**Proof Practice**

Given:  $\angle 1$  is supplementary to  $\angle 6$

Prove:  $l \parallel m$



Statements

Reasons

$\angle 1$  is supplementary to  $\angle 6$

$\angle 5$  and  $\angle 2$  are supplementary

So  $\angle 4$  and  $\angle 6$  are congruent

$\angle 4$  and  $\angle 2$  are vertical angles  
across the transversal

Therefore

$\therefore l \parallel m$

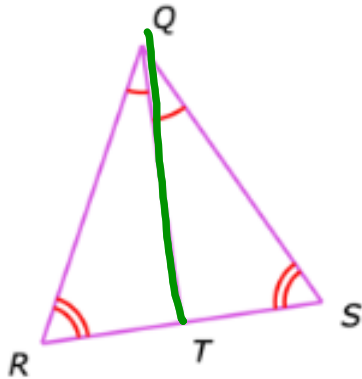
Corresponding Angles  
Conjecture

Corresponding Angle  
Conjecture

Alternate Interior Conjecture

Converse Parallel Lines  
Conjecture

Complete the proof that  $\overline{QS} \cong \overline{QR}$ .



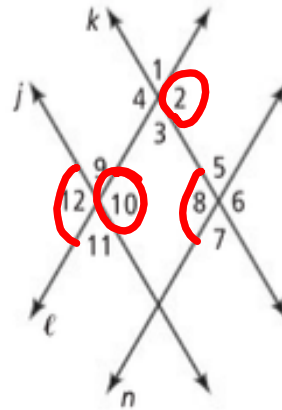
Statements	Reasons
<p>Isosceles base angles  <math>\angle R \cong \angle S</math></p>	<p><math>\angle</math> size determines</p>
<p>Base <math>\angle</math> are congruent                      it is isosceles</p>	<p>size of base angles                      Converse of Isosceles</p>
<p><math>\angle R \cong \angle S</math> and Both                      Q's are the same</p>	<p>Conjecture</p>

Therefore  $\angle T$ 's are the same

Or  $\overline{QR}$  is congruent to  $\overline{QS}$  and the proof is that the converse of Isosceles Triangles conjecture

Given:  $l \parallel n$ ,  $\angle 12 \cong \angle 8$

Prove:  $j \parallel k$



Statements	Reasons
$\angle 4 \cong \angle 8$	Corresponding angle conjecture
$\angle 10 \cong \angle 2$	<i>corresponding angle conjecture</i>
<i>l is the transversal</i>	<i>Parallel lines conjecture</i>
<i>Therefore <math>j \parallel k</math></i>	

